

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Lin Davis	Art Unit :	2612
Serial No. :	10/613,720	Examiner :	Eric Blount
Filed :	July 3, 2003	Conf. No. :	4972

Title : **FUEL DISPENSER IGNITION SOURCE DETECTOR**

Mail Stop Appeal Brief - Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

BRIEF ON APPEAL

(1) Real Party in Interest

DRESSER, INC., the assignee of the present Application, is the real party in interest.

(2) Related Appeals and Interferences

There are no related appeals and interferences.

(3) Status of Claims

Claims 1-7, 9-29 and 31-36 are pending in the application, with Claims 1, 13, 14, 22 and 27 being independent. Claims 1-7, 9-29 and 31-36 stand rejected, and all pending claims are being appealed.

(4) Status of Amendments

All amendments have been entered and no amendments are being submitted herewith.

(5) Summary of Claimed Subject Matter

A fuel dispensing station (*e.g.*, 100, Page 7, lines 16-17) comprising a fuel dispenser (*e.g.*, 200, Page 8, lines 4-11), an ignition source detector (*e.g.*, 310, Page 8, lines 1-2), and a control unit (*e.g.*, 220, page 8, lines 12-15). The ignition source detector is operable to directly detect a spark or an ember in proximity to the fuel dispenser and, in response to detecting an unwanted ignition source, transmit a detection signal indicating the presence of

the unwanted ignition source. See Page 6, lines 21-23. The ignition source detector is located on the fuel dispenser. See Page 8, lines 1-2. The control unit receives the detection signal and transmits a control signal to the fuel dispenser. See Page 8, lines 12-15. The fuel dispenser responds to the control signal by inhibiting the dispensing of fuel independently of other fuel dispensers. See Page 9, lines 6-8.

(6) Grounds of Rejection

I. Claims 1-7, 9-29 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,191,695 issued to Tatsuno ("*Tatsuno*") in view of Japanese Patent No. JP 57022947 issued to Tatsuno ("*Tatsuno II*") and further in view of U.S. Patent No. 6,518,574 issued to Castleman ("*Castleman*").

(7) Argument

I. The Combination of *Tatsuno*, *Tatsuno II*, and *Castleman* Fails to Teach or Suggest the Claimed Invention.

A. *Castleman* Fails to Teach or Suggest a Detector Operable to Directly Detect a Spark or an Ember

Claim 1, 13, 14, 22, and 27 and Their Dependents

Claim 1 recites:

A fuel dispensing station comprising:
a fuel dispenser;
an ignition source detector operable to directly detect a spark or an ember in proximity to the fuel dispenser and, in response to detecting an unwanted ignition source, transmit a detection signal indicating the presence of the unwanted ignition source, wherein the ignition source detector is located on the fuel dispenser; and
a control unit which receives said detection signal and transmits a control signal to said fuel dispenser, wherein said fuel dispenser responds to said control signal by inhibiting the dispensing of fuel independently of other fuel dispensers.

The combination of *Tatsuno*, *Tatsuno II*, and *Castleman* fails to teach or suggest each and every limitation of the claimed invention. To establish obviousness, the proposed combination must teach or suggest every limitation of the claimed invention. M.P.E.P. § 706.02(j). Thus, the Examiner has failed to establish obviousness. For the teaching of the detector operable to directly detect a spark or an ember, the Examiner offers the flame detector disclosed in *Castleman*. Office Action dated July 28, 2006, Page 4. However, *Castleman* merely teaches a detector with wide-spectrum sensitivity to increase the sensitivity to a flame or fire. ABSTRACT. The Examiner fails to cite any passage in *Castleman* that teaches or suggest that the wide-spectrum detector is operable to detect a spark or ember.

In particular, *Castleman* teaches a flame detector 12 detects the infrared energy range from 700-5000 nanometers and the visible energy range from 400-700 nanometers. Col. 4, lines 6-9. The microcomputer 16 processes the collected spectrum data to identify characteristics or patterns of a flame or fire. Col. 4, lines 10-16. In analyzing the data, microcomputer 16 compares the data to characteristics of fire signatures or false alarm models. Col. 4, lines 25-27. In terms of the false alarms, the microcomputer 16 may be operable to detect a small open flame that last a short period of time, *i.e.*, a flicker, but *Castleman* fails to teach or suggest that the detector is operable to detect an ember or spark. *Id.* In response to detecting a fire, the flame detector 12 activates an alarm. Col. 4, lines 27-32. Thus, the proposed combination fails to teach or suggest the invention defined by claim 1 and its dependents.

In summary, none of the three references relied upon by the Examiner discloses a device that is taught to be operative to detect a spark or ember, let alone such a device in combination with a control unit that sends a signal to a specific dispenser as claimed.

Independent claims 13, 14, 22, and 27 recite limitations that are similar, although not identical, to the limitation of claim 1 discussed above. Therefore, the proposed combination fails to teach or suggest the invention defined by these independent claims and their dependents.

B. The Examiner Relies on Hindsight to Combine Three References

The rejection of the pending claims is improper because there is no showing of the required motivation to combine the three references hand-picked by the Examiner (*Tatsuno*, *Tatsuno II*, and *Castleman*) to reject the claims. More particularly, there is no showing of the required motivation to combine *Tatsuno* and *Tatsuno II*, nor *Tatsuno* and *Castleman*. Indeed, *Tatsuno* teaches a system for detecting cell phones in contrast to *Tatsuno II* and *Castleman* that teach systems for detecting fires. According to the Examiner in the Office Action mailed July 28, 2006, *Tatsuno* discloses all of the limitations of independent claims 1, 13, 14, 22, and 27 with the exception of an ignition source. Office Action, pages 3-4. The Examiner looks to *Tatsuno II* and *Castleman* for disclosure of these limitations. The Examiner states that it would have been obvious to make this combination because both *Tatsuno* and *Tatsuno II* shut down fuel pumps "upon detection of an unwanted source at a fueling station" and the combination with *Castleman* would allow a response to an ignition source. *Id.*

However, in order to modify a reference in an effort to produce the claimed invention, there must be some suggestion or motivation for such modification found in the reference itself or in the knowledge generally available to one of ordinary skill in the art at the time of the invention. M.P.E.P. § 2143.01. Further, in establishing a *prima facie* case of obviousness, it is incumbent upon the Examiner to provide evidence supporting why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). The mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990); M.P.E.P. § 2143.01.

Here, the Examiner has not cited any language in *Tatsuno* or *Castleman* or within information commonly known to those skilled in the art that provides the necessary motivation or suggestion to combine the references. Nowhere does *Tatsuno* disclose, teach, or suggest a need for a flame detector as disclosed in *Tatsuno II* or *Castleman*. In fact, *Tatsuno* merely teaches monitoring a predetermined frequency for detecting portable phones

that may transmit electromagnetic-waves that interfere with gas-station equipment or whose use may result in an electrostatic discharge. *Tatsuno*, Col 3, Lines 30-33; Col. 1, Lines 13-25. In addition, *Tatsuno II* and *Castleman* merely teach a flame detector that monitors infrared in order to detect flames. Nothing in *Tatsuno II* or *Castleman* motivates or suggests the use of the disclosed flame detectors with a system that monitors radio frequencies for detecting portable phones.¹ The Examiner does assert "it was known in the art ... that electromagnetic devices are capable of producing sparks when in the vicinity of fueling stations." Though, the Examiner fails to illustrate how this statement provides the necessary suggestion or motivation to combine a system that monitors radio frequencies as disclosed in *Tatsuno* and a flame sensor that detects infrared radiation as disclosed in *Castleman* and *Tatsuno II*. Thus, the suggestion or motivation required by M.P.E.P. § 2143.01 for the proposed combination does not exist, and the Examiner has failed to identify the source of such suggestion or motivation.

Furthermore, in failing to specifically identify specific teachings in the cited references that would suggest or motivate one of skill in the art at the time of invention to combine *Tatsuno*, *Tatsuno II* and *Castleman*, the Examiner has used hindsight to look at the claimed invention and then conclude that it would be obvious to combine the portable-phone detection system of *Tatsuno* with the teachings of *Tatsuno II* and *Castleman*. Measuring a claimed invention against the standard established by Section 103 requires the difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See, e.g., *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 USPQ 303, 313 (Fed. Cir. 1983).

In *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999), the Federal Circuit explained that evidence of a suggestion, teaching, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a

¹ As is well known in the art, portable phones transmit at radio frequencies.

suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight. *Id.* at 999 (emphasis added).

It is for this reason that the Examiner must specifically identify the reasons one of ordinary skill in the art would have been motivated to select the references and combine them. The Examiner can satisfy the burden of obviousness in light of a combination “only by showing some objective teaching [leading to the combination].” See, e.g., *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988). Although evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, the range of sources available does not diminish the requirement for actual evidence. Broad conclusory statements by the Examiner regarding the teaching of multiple references, standing alone, are not “evidence.” *In re Dembiczak*, 175 F.3d at 999. Here, the broad conclusory statement of the Examiner that the combination would have been obvious because they both teach detecting “an unwanted source” or it would allow “early detection of ... [an] ignition source” is not evidence. Applicant respectfully submits that the Examiner has not provided the required evidence of a suggestion, teaching, or motivation to combine *Tatsuno*, *Tatsuno II* and *Castleman*. Without this evidence, the Examiner's rejections amount to no more than an impermissible hindsight reconstruction of Applicant's invention.

Furthermore, modifying *Tatsuno* as suggested by the Examiner would change the principle of operation of the portable-phone detection system disclosed in *Tatsuno* and render key features useless or inoperable. If a “proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” M.P.E.P. §2143.01. The principle of operation of the portable-phone detection system in *Tatsuno* is to process a predetermined frequency to detect portable phones. *Tatsuno*, Col. 2, Lines 50-58. The design, construction, and use of the portable-phone detection system as disclosed in *Tatsuno* that could use the flame detector disclosed in *Tatsuno II* or *Castleman* would require a substantial reconstruction and redesign of the elements in *Tatsuno*. The control unit 58 disclosed in *Tatsuno* would have to be redesigned to process signals

indicating the detection of radiant energy from multiple spectrums, including visible, near infrared, and wide infrared spectrums, as opposed to a predetermined frequency. Therefore, for at least these reasons, claims 1, 13, 14, 22, and 27 and their dependents are allowable.

CONCLUSION

In view of the foregoing, the Examiner's rejection should be reversed. Should the Board be of the opinion that a claim on appeal may be amended to overcome a specific rejection, the Board is respectfully requested to include in the opinion such a statement and afford appellant the right to amend in conformity therewith.

Attached herewith is a separate Petition for Extension of Time along with authorization for the Commissioner to charge the Extension of Time Fee to Deposit Account No. 06-1050.

The Commissioner is hereby authorized to charge the brief fee of \$500 to Deposit Account No. 06-1050. The Commissioner is also hereby authorized to charge any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: November 14, 2006

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Appendix of Claims

1. A fuel dispensing station comprising:

a fuel dispenser;

an ignition source detector operable to directly detect a spark or an ember in proximity to the fuel dispenser and, in response to detecting an unwanted ignition source, transmit a detection signal indicating the presence of the unwanted ignition source, wherein the ignition source detector is located on the fuel dispenser; and

a control unit which receives said detection signal and transmits a control signal to said fuel dispenser, wherein said fuel dispenser responds to said control signal by inhibiting the dispensing of fuel independently of other fuel dispensers.

2. The fuel dispensing station of claim 1, further comprising:

a fuel-management unit and at least one communicator, wherein said detection signal output by said ignition source detector is received by a fuel-management unit, the fuel-management unit outputting an information signal to the communicator to inform users that fuel dispensing has been suspended.

3. The fuel dispensing station of claim 2, wherein said fuel dispenser includes said control unit therein, and wherein said detection signal generated when the spark or the ember is detected is transmitted to said control unit via said fuel-management unit.

4. **(Cancelled)**

5. The fuel dispensing station of claim 1, wherein said ignition source detector is provided on a dispenser housing of said fuel dispenser.

6. The fuel dispensing station of claim 1, wherein said ignition source detector is provided internally within said fuel dispenser.

7. The fuel dispensing station of claim 1, wherein said ignition source detector is provided on a fuel nozzle.

8. **(Cancelled)**

9. The fuel dispensing station of claim 1, wherein said fuel dispenser responds to said control signal by temporarily suspending fuel supply.

10. The fuel dispensing station of claim 1, wherein at least one communicator outputs signals by means of light, sound or both.

11. The fuel dispensing station of claim 1, wherein said source detector is an Infrared (IR) detector.

12. The fuel dispensing station of claim 1, wherein said source detector is an electromagnetic spectrum detector.

13. A fuel dispensing station comprising:

a fuel dispenser;

an ignition source detector within said fuel dispenser and operable to directly detect a spark or an ember in proximity to the fuel dispenser and, in response to detecting an unwanted ignition source, transmit a detection signal indicating the unwanted ignition source;

a fuel-management unit for transmitting said detection signal detected by said source detector to at least one communicator; and

a control unit which receives said detection signal and generates a control signal for output to said fuel dispenser, wherein said fuel dispenser responds to said control signal by inhibiting the dispensing of fuel independently of other fuel dispensers.

14. A method for preventing unintended ignition in a fuel dispensing environment comprising the steps of:

directly detecting a spark or an ember within proximity to a fuel dispenser, the spark or ember detected by the fuel dispenser;

communicating the detection of the spark or the ember to at least one of a customer, an onsite personnel, and an offsite personnel; and

suspending the delivery of fuel by the fuel dispenser in reaction to the detection of the ignition source independently of other fuel dispensers.

15. **(Cancelled)**

16. The method of claim 14 wherein the communicating includes the use of light or sound.

17. The method of claim 14 wherein the suspending includes suspending operation of pumps in the dispensing environment.

18. The method of claim 14 further including the steps of:
detecting the absence of a spark or an ember; and
resuming the delivery of fuel in reaction to the detection of the absence of a spark or an ember.

19. The method of claim 14 further comprising the steps of:
detecting the absence of a spark or an ember;
communicating the absence of a spark or an ember to at least one of a customer, an onsite personnel, and an offsite personnel; and
allowing a resumption of fuel dispensing if requested by at least one of a customer, an onsite personnel, or an offsite personnel.

20. The method of claim 19 further comprising the step of allowing resumption of fuel dispensing only upon request by onsite personnel.

21. The method of claim 14 further comprising the steps of:
generating a detection signal upon detecting a spark or an ember;
transmitting the detection signal to a control unit;
generating a control signal in reaction to receipt of the detection signal at the control unit;
and
transmitting the control signal to at least one of a communicator and a fuel delivery system.

22. A system for dispensing fuel comprising:
an ignition source detector operable to directly detect a spark or an ember in proximity to a fuel dispenser and transmit a detection signal upon detecting at least one of a spark or an ember, wherein the ignition source detector is located on the fuel dispenser;
the fuel dispenser for delivery of fuel into containers or vehicles;
a communicator for communicating with either sound or light to at least one of a customer in the vicinity of the fuel dispenser, an onsite personnel, and an offsite personnel; and
a control unit operably connected with the ignition source detector, fuel dispenser, and communicator and adapted to receive the detection signal transmitted by the ignition source detector and in reaction to the detection signal transmit at least one control signal;
wherein the fuel dispenser receives the control signal and suspends the delivery of fuel independently of other fuel dispensers and the communicator receives the control signal and communicates the detection of an ignition source.

23. The fuel dispensing station of claim 1, the controller unit further operable to detect an absence of a spark or an ember and, in response to the absence, automatically transmit a command to the at least one fuel dispenser to resume the delivery of fuel.

24. (Cancelled)

25. The fuel dispensing station of claim 13, wherein said source detector is an Infrared (IR) detector.

26. The fuel dispensing station of claim 13, the controller unit further operable to detect an absence of a spark or an ember and, in response to the absence, automatically transmit a command to the at least one fuel dispenser to resume the delivery of fuel.

27. A fuel dispensing station comprising:
a fuel dispenser;
an ignition source detector in the fuel dispenser operable to directly detect a spark or an ember and, in response to detecting an unwanted ignition source, transmit a detection signal indicating the presence of a spark or an ember; and
a control unit which receives said detection signal and transmits a control signal to said fuel dispenser, wherein said fuel dispenser responds to said control signal by inhibiting the dispensing of fuel.

28. The fuel dispensing station of claim 1, further comprising:
a fuel-management unit and at least one communicator, wherein said detection signal output by said ignition source detector is received by a fuel-management unit, the fuel-management unit outputting an information signal to the communicator to inform users that fuel dispensing has been suspended.

29. The fuel dispensing station of claim 2, wherein said fuel dispenser includes said control unit therein, and wherein said detection signal is transmitted to said control unit via said fuel-management unit.

30. **(Cancelled)**

31. The fuel dispensing station of claim 1, wherein said ignition source detector is provided on a dispenser housing of said fuel dispenser.

32. The fuel dispensing station of claim 1, wherein said ignition source detector is provided internally within said fuel dispenser.

33. The fuel dispensing station of claim 1, wherein said ignition source detector is provided on a fuel nozzle.

34. The fuel dispensing station of claim 1, wherein said fuel dispenser responds to said control signal by temporarily suspending fuel supply.

35. The fuel dispensing station of claim 1, wherein at least one communicator outputs signals by means of light, sound or both.

36. The fuel dispensing station of claim 1, wherein said source detector is an electromagnetic spectrum detector.

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Evidence Appendix

NONE.

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Related Proceedings Appendix

NONE.